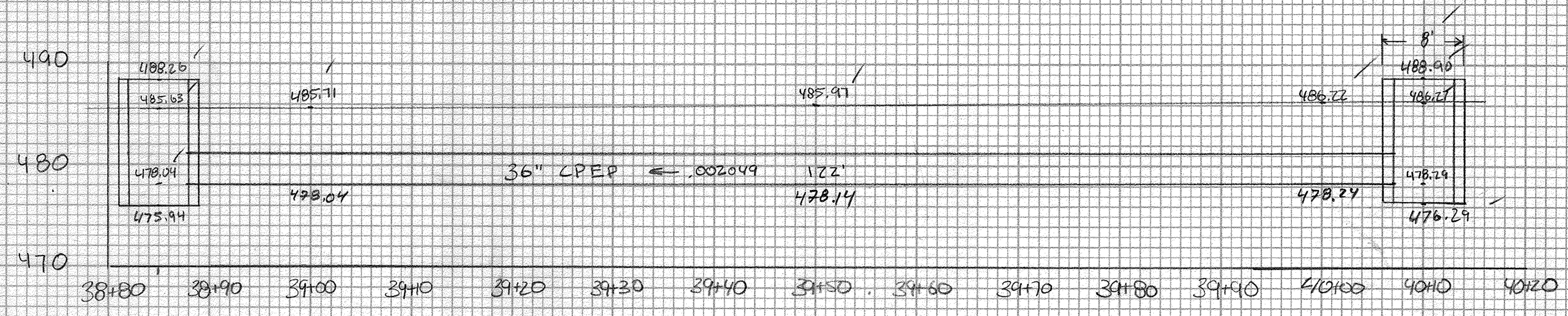


DS 47



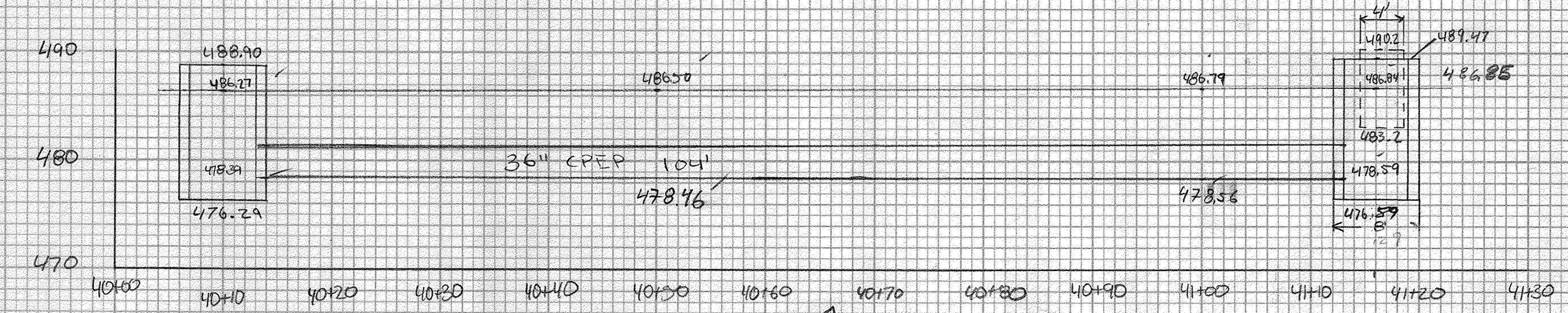
100 scale

Station	Depth	Avg Depth	Width	Volume
38+87	7.59	5.763	5.5' x 11'	461.62 FT ³ 302.5
39+00	7.67	5.775	5.5' x 50'	2131.25 FT ³ 1375
39+50	7.82	5.790	5.5' x 50'	2172.50 FT ³ 1375
40+00	7.97	5.795	5.5' x 50'	2242.25 FT ³ 1375
40+06.5	7.93	5.795	5.5' x 6.5'	284.22 FT ³ 18.75
Total				5049.59 FT ³ 3058.75
Trench Exc				182.02 cy 220.69
Granular Backfill				+ 23.22 cy
TOTAL T.E.				210.24 cy

Trench Excavation for CB 47
 $(\pi \times 4.2^2) \times 5 = 251.33 \text{ FT}^3$
 $(\pi \times 4.2^2) \times 4.98 \times 1.5 = 375.48 \text{ FT}^3$
 Inlet $5 \times 5.5 = 27.50$
 Outlet $2.98 \times 5.5 \times 1.5 = 24.59$
 48.87 FT^2
 $(48.87 + 52.09) \times 118 = 5956.64 \text{ FT}^3 / 27 = 220.62 \text{ cy} + 23.22 \text{ cy} = 243.84 \text{ cy Total Trench Exc.}$

Granular Backfill
 $1.75 \times 5.5 = 9.63 \text{ FT}^2$
 $(\pi \times 1.75^2) / 2 = 4.81 \text{ FT}^2$
 $4.82 \times 102 = 578.4 = 21.42 \text{ cy} \text{ RCD 08/29/07}$

DS 51



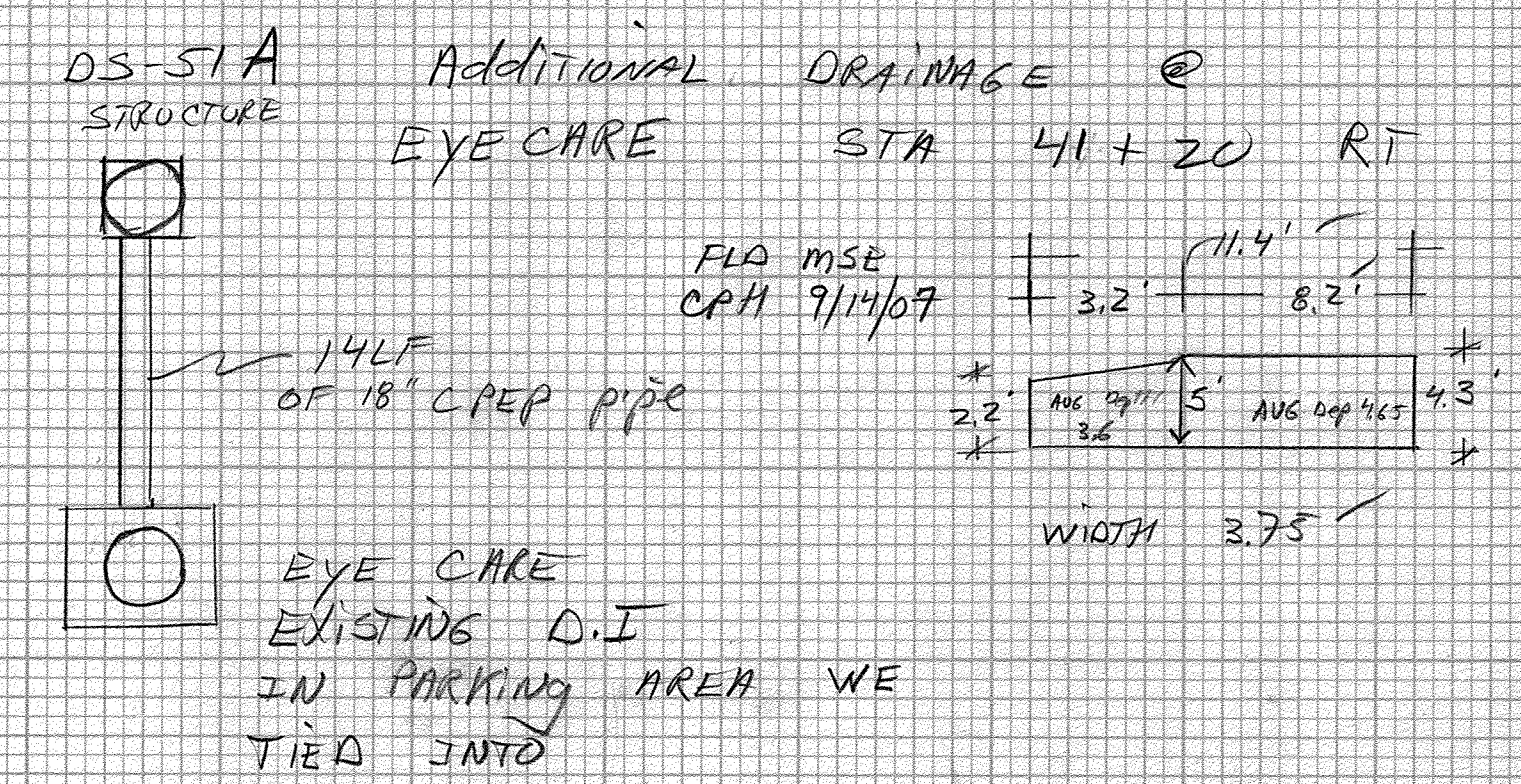
EXISTING 15' FM 3' x 3' CPEP 01/07
 Sand Rock = $(2.63 \times 3 \times 3) / 27 = 0.88 \text{ cy}$
 Trench Rock = $(0.37 \times 3 \times 3) / 27 = 0.12 \text{ cy}$
 CUB 02/09/10
 00 SCALE

Trench Rock Excavation
 $4 \times 4 \times 3.6 = 58.08 \text{ FT}^3 / 27 = 2.16 \text{ cy}$
 $2 \times 2 \times 3.6 = 13.92 \text{ FT}^3 / 27 = 0.51 \text{ cy}$
 $40.26 \text{ FT}^3 / 27 = 1.49 \text{ cy}$
 Trench Exc. For CB 51
 $5 \times 4^2 \times 4 \text{ FT} = 251.33 \text{ FT}^3$
 $5.75 \times 4.2 \times 1.75 = 395.84 \text{ FT}^3$
 $647.17 \text{ FT}^3 / 27 = 23.97 \text{ cy}$
 Trench Exc Pipe
 $(5 \times 5.5) + (3.25 \times 5.5 \times 1.5) = 54.32 \text{ FT}^2$
 $(5 \times 5.5) + (2.88 \times 5.5 \times 1.5) = 51.28 \text{ FT}^2$
 $(54.32 + 51.26) \times 100 = 5279.00 \text{ FT}^3 / 27 = 195.52 \text{ cy} \text{ Pipe}$
 $+ 23.97 \text{ cy} \text{ structure}$
 $219.49 \text{ cy Total Trench for DS 51}$

Granular Backfill
 $1.75 \times 5.5 = 9.63$
 $(\pi \times 1.75^2) / 2 = 4.81$
 $4.82 \times 102 = 491.84 \text{ FT}^3 / 27 = 18.21 \text{ cy} \text{ RCD 08/30/07}$

DS 51 + DS 51/A
 PAID AS NEW DS 51

T.E.	DS 51	219.49 cy
	DS 51/A	6.89 cy
		226.38 cy
G.B.	DS 51	18.21 cy
	DS 51/A	1.00 cy
		19.21 cy



Additional DRAINAGE @ EYE CARE STA 41+20 RT

T.E.	4.65 x 8.2 x 3.75	= 5.29 cy
T.E.	3.6 x 3.2 x 3.75	= 1.60 cy
		6.89 cy
G.B.	13' x 3.75 x .875	= 1.58 cy
-pipe G.B.	13 x (3.14 x .875^2) / 27	= .58 cy
		1.0 cy

DATE: _____ BY: _____
 ORIGINAL SURVEY PLATTED, INCORPORATED, NOTE BOOK AREAS CHECKED

DATE: _____ BY: _____
 ORIGINAL SURVEY PLATTED, INCORPORATED, NOTE BOOK AREAS CHECKED